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CR-137450

APPLICATION OF REMOTE SENSING FOR FISHERY RESOURCE ASSESSMENT AND MONITORING

SKYLAB EXPERIMENT NO. 240

CONTRACT NO. T-8217B

MONTHLY PROGRESS REPORT NO. 11

REPORTING PERIOD: 10 March - 10 April 1974

Approved _____
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Date Submitted April 12, 1974

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APPLICATION OF REMOTE SENSING FOR FISHERY RESOURCE ASSESSMENT AND MONITORING

INTRODUCTION

This is the eleventh of a monthly series of progress reports required by the Statement of Work for Project 240 entitled "Application of Remote Sensing for Oceanic Gamefish Assessment and Monitoring" under Contract No. T-8217B.

OVERALL STATUS

The post mission analytical phase is approaching closeout with the submission of a draft copy of the final report required contractually by 31 May 1974.

RESULTS

An evaluation was conducted of previously developed white marlin distribution models. The results indicate a potential for reducing a fishing area by a factor of three to four while increasing the probability of productive fishing. Histograms were prepared with actual distribution plotted against predicted distribution values.

Turbidity, chlorophyll-a and sea surface temperature contour maps have been prepared from remote measurements obtained by aircraft sensors. Comparisons with sea truth measurements indicate that reasonable accuracy has been obtained in spite of the occasionally unfavorable atmospheric conditions under which the remotely sensed observations were obtained.

Oceanographic and fishery parameter overlays were superimposed on available Skylab imagery after subjecting the latter to false color/grey scale density slicing techniques. No correlations were observed; however, cloud cover limited the ocean area showing in the photography and much of that was unsuitable for use due to sunglint.

EXPECTED ACCOMPLISHMENTS

Correlations of sailfish with environmental parameters will be explored. Hitherto, efforts have been largely restricted to white marlin as a matter of priority.

Regression models for white marlin distribution prediction will be analyzed and compared to abundance data.

Remotely sensed measurements of environmental parameters will be substituted for sea truth values in the models and prediction compared to those from sea truth.

SUMMARY OUTLOOK

Preparation of the final report will commence in the next reporting period and will require an increasing allocation of effort that hitherto has been assigned to analysis. Progress has occurred during the past month with the positive evaluation of the white marlin distribution models and the preparation of turbidity, chlorophyll-a and sea surface contour maps from remote measurements. Further significant progress will have occurred if the remote measurements, after substitution for sea truth in models as currently planned for next month are found to correlate with the resource.

TRAVEL SUMMARY

The Principal Investigator will travel to Willow Run, Michigan, for presentation of a paper on or about 15 April 1974, to a symposium on remote sensing. The paper is entitled "Preliminary Results of Fisheries Investigation Associated with Skylab.